## REMARKS

Claims 1-7 have been previously canceled. Claims 8-18 have been amended. No claims have been canceled by way of this response. Thus, claims 8-18 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to Rejections Under Section 103:

On pages 2-18 of the Office Action, certain claims stand rejected under 35 U.S.C § 103(a) as being unpatentable over Anuzis in view of newly cited U.S. Publication No. 2004/0114809 to Kim and further in view of the secondary references cited in the previous Office Action dated November 2, 2009.

Applicants respectfully submit that these claims are patentable and respectfully request the Examiner to withdraw the Section 103 rejections.

The Examiner is reminded of the following quotation from MPEP 2143:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Applicants' claim 8 recites, in part:

> examining the stored non-image process signals to ascertain whether a non-image process signal has remained within an amplitude band since it was last stored and how long ago it was last stored, wherein the examining step involves selecting the size of the amplitude to correspond to the current operating state of the plant; and
>
> storing the non-image process signal as a part of a compressed signal set if it was last stored longer ago than a predefined time interval.

The Examiner contends that Para. [0083]-[0087] disclose these two elements. However Anuzis does not disclose these elements. Para. [0083]-[0087] actually discloses:

> [0083] The following discussion focuses on an application of the system to monitoring the health of a gas turbine aero-engine, but it will be appreciated that

the methods can be adapted to other power plant, including for example ground-based and marine gas turbines, and spark ignition and compression ignition internal combustion engines, as well as other mechanical, thermodynamic, fluid, electrical or electronic systems. The system acquires performance parameters from the gas turbine digitally via an ethernet link at a rate between 20 and 40 Hz. Typical performance parameters are measurements of pressure, temperature, thrust, altitude or Mach number. Vibration data is acquired from analogue vibration transducers which are sampled at user-selectable sampling rates (from 625 Hz to 80 kHz) via an analogue-to-digital converter. The amplitude spectrum of the vibration data is generated using the Fast Fourier Transform every 0.2 sec.

[0084] The performance and vibration data streams are asynchronous and stored in separate files together with the corresponding timestamps. During review, as data is loaded into memory, synchronisation is performed between the performance and spectrum data on a line by line basis. Markers 10,12 (see FIG. 1) are kept which record the last synchronised line in the vibration and performance data ring buffers 14,16. When new data is available in memory, the timestamp tar the next vibration spectrum line is examined. The synchronisation algorithm starts from the last previously synchronised location in the performance data and searches forwards or backwards based on the timestamps of the performance data (accurate to 0.05 sec) until the closest matching timestamp in the performance data ring buffer 16 is identified. This location in the performance data is recorded as being synchronised with the line in the vibration ring buffer 14. The algorithm then proceeds to the next line in the vibration ring buffer 14 (0.2 sec later) and so on until there is no more data available to synchronise.

[0085] Clearly, therefore, if the performance parameters are acquired at 20 Hz (i.e. at 0.05 sec intervals) the synchronisation precision is 0.075 sec (i.e. half the acquisition interval added to the accuracy of the timestamps) and if the performance parameters are acquired at 40 Hz (i.e. at 0.025 sec intervals) the synchronisation precision is 0.0625 sec.

[0086] Considering the synchronisation algorithm in a little more detail, it can be seen from FIG, 1 that the algorithm maintains a synchronisation table 18 that gives the index of the performance data entry that matches each vibration data line. The algorithm uses variables to mark the latest synchronised data in each buffer. The operation of the algorithm can be summarised by the following `pseudo code`:

1 1. Initialise the latest synchronised markers to the start of the vibration and performance data. 2. Loop while there is more data in both ring buffers. (a) Starting from the latest synchronised data item in each ring buffer, examine the time stamp, t, on the next entry in the vibration ring buffer. (b) Search forward in the performance ring butter until a time stamp greater than t is found. Select

> between this entry in the performance ring buffer and the previous entry for one which is closest to t and record the match in the synchronisation table.
>
> [0087] Once synchronised, the analysis of this performance and vibration data relies on constructing models of normal jet engine behaviour and then detecting an event or an abnormality with respect to these models.

More specifically, paragraph [0083] discloses an application of a system for monitoring the health of a gas turbine aero-engine, or other power plant, where the system acquires performance parameters from the gas turbine at a specific rate.

Paragraph [0084] discloses that certain data is asynchronous and stored in separate files together with corresponding timestamps. During review, as data is loaded into memory, synchronization is performed between the performance and spectrum data on a line by line basis. Markers are used to record the last synchronized line in the data ring buffers. When new data is available in memory, the timestamp tar the next vibration spectrum line is examined. The synchronization algorithm starts from the last previous synchronized location and searches based on timestamps until the closest match is found in the data ring buffer. This location is then recorded as being synchronised with the line in the vibration ring buffer.

Paragraph [0085] discloses the synchronization precisions based on the acquired rate.

Paragraph [0086] discloses that the synchronization algorithm maintains a synchronization table that gives the index of the performance data entry that matches each vibration data line. Variables are used to mark the latest synchronized data in each buffer.

Finally, paragraph [0087] discloses that the synchronized data relies on constructing models of behavior used to detect an event or abnormality with respect to the models.

Therefore, it should be evident to the Examiner that this prior art does not disclose examining the stored non-image process signals to ascertain whether a non-image process signal has remained within an amplitude band since it was last stored and how long ago it was last stored, wherein the examining step involves selecting the size of the amplitude to correspond to the current operating state of the plant. The amplitude bands in Anuzis are set based on the type of data being collected. There is no teaching of having to ascertain whether a non-image process signal remains within an amplitude band.

Further, Anuzis does not disclose, or even suggest storing the non-image process signal as a part of a compressed signal set if it were last stored longer ago than a predefined time interval. This fact is further evident since Anuzis does not disclose compressing a signal. If Anuzis compressed its signal, then the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose. Then there is no suggestion or motivation to make the proposed modification. *See* MPEP 2143 (section V).

With respect to Kim, Kim discloses an image compression method. As amended, Applicants' invention does not involve image compression. As disclosed in Paragraph [0026], the process signals disclosed in Applicants' invention are produced and picked up by means of sensors. Thus the process signals are not images since a camera or video system is not disclosed.

Furthermore, even if the Examiner concluded that Kim's image compression disclosure is proper to maintain this rejection, the Examiner has failed to provide support as to how Kim's image compression method would work with Anuzis' non-compression invention to result in Applicants' invention. Thus, it should be clear to the Examiner that the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified. Doing so makes the teachings of the references insufficient to render the claims *prima facie* obvious. See MPEP 2143 (section VI).

Turning to claims 9-18, since they depend, either directly or indirectly from claim 8, Applicants respectfully submit that these dependent claims are patentable as well.

(Please proceed to the next page.)

Conclusion:

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. All correspondence should continue to be directed to our below-listed address. Accordingly, Applicant respectfully requests that the Examiner reconsider the objections and rejections and timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including fees for additional claims and terminal disclaimer fee, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: 07/09/10

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